Department of Energy
Washington, DC 20585
January 25, 2006

Secretary, Board of Environmental Review
Montana Department of Environmental Quality
P.O. Box 200901
Helena, MT 59620-0901

Re: MAR Notice No. 17-231: In the matter of the amendment of ARM 17.30.670 and 17.30.1202 pertaining to nondegradation requirements for electrical conductivity (EC) and sodium adsorption ratio (SAR) and definitions for technology-based effluent limitations, and the adoption of new rules I through X pertaining to minimum technology-based controls and treatment requirements for the coal bed methane industry.

Dear Sir or Madam:

The U.S. Department of Energy (DOE) is pleased to submit comments to the Montana Board of Environmental Review (BER) concerning the proposed rules on the management of produced water from coal bed natural gas (CBNG) wells.

DOE's interest in this proposal stems from the importance of CBNG in the national supply picture for natural gas. CBNG currently accounts for 9 percent of domestic natural gas production and the Powder River Basin, with a resource potential in excess of 25 trillion cubic feet of recoverable CBNG resource, is a prime future source for domestic production. This is especially important in these times of tight natural gas supply and high prices.

DOE does not regulate domestic oil and gas production. That is primarily the role of the states, and the Department works closely with state organizations such as the Interstate Oil and Gas Compact Commission to promote that state role. Rather, we have the dual goals of promoting and implementing national energy policy and conducting research and development to improve the cost-effectiveness and environmental performance of domestic oil and gas exploration and production.

It is in this capacity that DOE regularly provides technical and regulatory analyses to Federal and state regulatory agencies. These analyses serve to provide a scientific basis for regulatory and land management decisions and discussions. They help in the development of regulatory requirements that provide environmental benefits commensurate with their energy impacts.

After reviewing the proposed Montana CBNG water management rule, DOE tasked Argonne National Laboratory and Sandia National Laboratory to examine the rule and prepare written evaluations on various aspects of the proposal. Argonne focused on regulatory and policy issues and their interrelationships with technology, and Sandia focused on water treatment and engineering and hydrologic and geologic technical issues

associated with the zero discharge requirements of the proposal. These two reports are enclosed, and along with this letter, are submitted as DOE's comments on the proposed rule.
The main findings of the laboratory analyses are:

- The proposal inconsistently characterizes the value of CBNG produced water, calling it hazardous in some places and beneficial in others.
- The proposal does not follow Clean Water Act guidelines for establishing technology-based limits. The most notable deviation from the guidelines is the proposal's attempt to force the use of just one or two specific technologies, which may restrict the use of emerging innovative technologies that could manage CBNG produced water in an environmentally and ecologically sound manner.
- The proposal includes numerical technology-based effluent limits, without analytic detail to explain why they were selected. Traditional methods to evaluate best available technology economically achievable and best professional judgment technology-based limits were not followed.
- The proposal justifies the affordability of re-injection and treatment based on an unpublished Environmental Protection Agency (EPA) study that analyzed much less stringent discharge limits. The costs estimated by the draft EPA report underestimate the actual costs that would be associated with meeting the proposal's strict limits, and therefore are not fully relevant as rationale for supporting new limits.
- The proposed effluent limits are much stricter than necessary to meet water quality standards in Montana water bodies. Dischargers must treat to levels significantly cleaner than the receiving waters.
- The proposal contains several apparent logical inconsistencies that are described in the laboratory reports.
- There appear to be no systematic and successful approaches to re-injection of CBNG produced water into coal seams or injection into other formations in the Powder River Basin (PRB). Geotechnical factors limit options. The success rate for re-injection in the PRB is less than 30 percent. Waivers will most likely be required in the majority of cases.
- The waiver process needed to show infeasibility for injection as proposed is time consuming, with a time table that requires up to a year to complete. This delay can adversely affect the decision to proceed with a CBNG project. A shorter timetable could provide the same amount of environmental protection and public input.
- The proposed treatment levels for SAR, EC, Ca, Mg, and Na are inconsistent, and will create an effluent water quality that could have a negative impact to aquatic ecology and river and stream habitat, as well as on irrigation.
- The water treatment technologies identified in the proposal have not been evaluated using EPA technology verification guidelines for developing cost and performance data on treatment technologies. Therefore, it is unknown whether the proposed treatment levels are technically feasible, cost effective, or consistently achievable across for the range of CBNG produced waters in the region.

- The treatment technologies identified, and the level of treatment needed to meet the proposed standards, will generate significant amounts of wastes that must be managed and could lead to unintended environmental impacts from handling and moving these waste streams.
- With the exception of an exemption for CBNG water used for livestock watering, no other management options are permitted for CBNG water. This restriction effectively precludes the direct use of CBNG water without treatment for many beneficial purposes, such as managed irrigation or industrial uses that offset demands for fresh water.

Discussion of these issues and additional findings are contained in the two enclosed reports.

DOE's purpose in submitting these findings for the record is to inform the debate with technical information and analyses so that regulatory decisions can be based on sound science within the context of the national energy picture. I hope this information will be useful to the Board of Environmental Review in your deliberations.

Sincerely,

James A. Slutz
Deputy Assistant Secretary
Oil and Natural Gas

Enclosures (2)

cc: Tom Richmond
Administrator
Montana Board of Oil and Gas Conservation

Don Likwartz
Oil and Gas Supervisor
Wyoming Oil & Gas Conservation Commission